NOTES ON NEW AND RARE SPECIES OF FUNGI FOUND AT ASHEVILLE, N. C.

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The State of North Carolina seems to be very rich in its fungous flora. The great variety of conditions found within our borders give ample room for a large number of species of these interesting plants, many of which appear to be rare in the United States, while not a few seem to be new to science.

The following notes have been selected from the writer's accumulation during the past twelve years as of possible interest to those in our state who are interested in these difficult and puzzling plants. All of the species discussed have been found near Asheville, and will doubtless be found quite generally in at least the western part of the state.

Lepiota floccosa sp. nov.

Pileus 2-5 cm. broad, at first campanulate, then expanded and obtusely umbonate, thickly covered with a soft, smooth, appressed tomentum, which is brown and at first continuous, then broken into appressed scales with the lighter context showing between. Margin thin, extending beyond the lamallae in a soft cottony margin.

Lamellae pure white, crowded, narrow, free.

Stipe pure white, thickly covered with white fibers which are at first attached to the margin of the pileus, and form a thick annular zone toward its summit.

Spores broadly elliptic 6-8 by 3-4 mc.

This species has been observed for several years. In appearance it is much like *L. clypeolaria,* but the spores are absolutely different. It has some of the characteristics of *L. acutesquamosa* Weim., but is amply distinct from it. It has the pileus always smooth and never shows the slightest trace of the acute scales which mark this latter species. The thick mass of white fibers which clothe the stipe is very characteristic and will at once distinguish it. Bresadola, whose

thorough knowledge of the Agarics is well known, says it is unknown in Europe. I find it each year in deep woods.

Lepiota parva sp. nov.

Pileus 6-12 mm. broad, thin, campanulate, then expanded and nearly plane with a rounded umbo, delicately tomentose, striate on the margin.

Lamellae pure white, rather distant from the stipe, crowded, very narrow.

Stipe slender, pure white, glabrous, 1-3 cm. long.

Annulus persistent, rather small. Spores 5-6 by 3-4 mc.

Growing in moss and on bare ground in woods.

This dainty species is closest to *L. parviannulata* of Europe. I find it frequently in colonies. It is a very delicate and distinct species.

Lepiota caerulea sp. nov.

Pileus 10-15 mm. broad, campanulate, then expanded and umbonate, blue gray, with the umbo darker, marked with dark, appressed fibrils, striate on the margin.

Lamellae flesh color, ventricose, free, thin, crowded.

Stipe slender, 2-3 cm. long, glabrous, white.

Spores ovate, apiculate 4-5 by 2-3 mc.

The peculiar blue-gray color of the pileus, with its small size and minute spores mark this species. It is not common but is found every year.

Two other species of Lepiota occur at Asheville which are possibly worthy of note, are withheld for the present. One which I call *L. brunnea* in my notes is much like Peck's *L. fuscosquamosa* but is uniformly only a fraction of its size. I find it from 5-8 mm. broad while Pecks's species is 2-5 cm. broad. This seems too great a difference to be reconciled, but the fact that the spores are about the same in the two species makes me hesitate.

Cortinarius robustus sp. nov.

Pileus as much as 14 cm. broad, very solid and firm, dull date brown, the paler margin thinner and inflexed, becoming expanded with maturity, viscid when moist, flesh firm, blue when moist, becoming white in drying.

Gills at first violaceous, then pallid, finally cinnamon, the violaceous tint persisting under the inflexed margin, adnate, irregular on the margin.

Stipe solid, firm, rather short, slightly violaceous, fibrillose to the point where the incurved pileus touches it, pubescent above that.

Spores 9-10 mc. long.

This is the largest and firmest species of Cortinarius that I find at Asheville. It belongs to Phlegmacium but seems distinct. I find it in large colonies under oaks. The stipe is only slightly bulbous in my specimens and never marginate.

The Carolina Cortinarii are quite numerous and very perplexing. Many of Peck's New York species occur in our mountains, along with some species which appear to be rare farther north. *Cortinarius balteatus,* of which I find no record in the United States, occurs with us occasionally, and is one of our finest species.

Boletus carolinensis sp. nov.

Pileus bright golden yellow, 5-8 cm. broad, viscid, staining the hands yellow, hemispherical, then expanded, and sometimes depressed at the center, margin thin, at first incurved.

Tubes at first white or nearly so, then yellow flesh color, mouths round, thickly covered with yellow glandular drops, which give them a yellow color.

Stipe colored like the pileus, but a little lighter, viscid, pruinose under a lens, often tapering downward, sometimes becoming hollow.

Spores ochraceous tan, 10-12 mc. long, appearing bright yellow under the microscope.

In lawns under oaks. Not common.

This is our most brilliant yellow species. I know no species which is very close to it. It is unusually viscid and the hands are stained in handling it. The tubes appear stuffed when young. The flesh is firm and white. The spore color is close to Ridgway's Mars yellow.

Volvaria cinerea sp. nov.

Pileus 1-2 cm. broad, gray or bluish gray, soon plane, with a small rounded umbo, clothed with long, dark, appressed fibrils, striate on the margin.

Gills rounded behind, remote from the stipe, white, then flesh color.

Stipe white, solid, fibrillose.

Volva dark colored, splitting into three or four divisions.

Spores 5-6 mc. long, broadly elliptic.

Growing on rotting logs of deciduous woods.

Our species of Volvaria are few in number and are rare. So far I have found but three species at Asheville. Each year I find *V. parvula* Weim. growing in flower beds under weeds. This is a very dainty species scarcely 1 cm. broad, pure white, and umbonate.

The third species is *V. pubescentipes* Pk. which is also *V. hypopitya* Fr. This is found usually growing on old leaves and is pure white with its pileus usually 4-6 mm. broad.

The following species occur at Asheville, though I find no record of their detection in other parts of the United States:

Tricholoma saponacea Fr.

This is occasionally found in the fall in oak woods. It has a curious soapy odor as it dries and the flesh and lamellae tend to turn red when injured. Bresadola has seen both my specimens and photographs and positively identifies them as this species.

Inocybe corydalina Quel.

This is one of our most interesting species of Inocybe. The pileus is white and of good size (3-7 cm. broad). It becomes more or less brown with age. The gills are pure white, then cinnamon, and the spores smooth. The flesh is white and becomes red when cut, especially in young plants. It has a peculiar odor which is very pronounced. Those to whom I have submitted it here compare the odor to that of Sandal Wood. This species seems to be closely related to *I. pyriodora* and as a matter of fact my plants seem to have part of the characters ascribed to both species, the reddening of the flesh is more suggestive of *I. pyriodora* than of *I. corydalina* but the odor is not at all that of fruit. Bresadola has seen and verified my specimens.

Hygrophorus calyptraeformis B. and Br.

Of all our Hygrophori this is the most attractive species. I find it in only one station. It is a beautiful rose pink in color and the thin pileus is acutely umbonate and split into recurved lobes. It is exactly in accord with Cook's figure. It is so striking that it must be rare as I find no record of its occurrence.

Two species of Crepidotus, *C. calolepis* Fr. and *C. mollis* Fr., are also not rare at Asheville. These are usually referred to *C. fulvotomentosus* Pk. and *C. haerens* Pk. The original description of *C. calolepis* does not well fit our plant, which accounts for the failure to recognize it.

It may be said, however, that the discrepancies are just as marked in the case of the Swedish plant. I found in 1905 abundant material of Frie's species in one of his old collecting grounds in Sweden and found it identical with our own plant. The same may be said of *C. mollis*. This species is viscid and has a peculiar gelatinous context, and a separable cuticle. Both our plant and those found in Sweden have these peculiarities and seem not to be different in any essential character. One who has seen both growing will have little doubt that our plant is the same as Fries' species.

ASHEVILLE, N. C.